(c) comparing the level of biological activity of step (b) with the level of biological activity that occurs in the medium in the presence of the polypeptide and the absence of the candidate molecule;

wherein a decreased level of biological activity of step (b), as compared to the level of biological activity that occurs in the medium in the presence of the polypeptide and the absence of the candidate molecule, indicates an antagonist; and an increased level of biological activity of step (b), as compared to the level of biological activity that occurs in the medium in the presence of the polypeptide and the absence of the candidate molecule, indicates an agonist.

72 (NEW). The method of claim 71 wherein the nucleic acid molecule encodes an amino acid sequence comprising the sequence of SEQ ID NO:11, or of SEQ ID NO:14, or of Leu-2 through Val-505 of SEQ ID NO:11.

73 (NEW). The method of claim 71 wherein the polypeptide comprises the amino acid sequence of SEQ ID NO:11, or of SEQ ID NO:14, or of Leu-2 through Val-505 of SEQ ID NO:11.

74 (NEW). The method of claim 71 wherein the recombinant polypeptide is a purified polypeptide.

75 (NEW). The method of claim 71 wherein the recombinant polypeptide is produced by cells in the medium.

76 (NEW). The method of claim 75 wherein the recombinant polypeptide is produced according to a method comprising culturing a recombinant host cell comprising a nucleic acid molecule comprising the sequence of SEQ ID NO:5 or of SEQ ID NO:13 under conditions promoting expression of said polypeptide.

77 (NEW). The method of claim 76, wherein the host cell is selected from the group consisting of bacterial cells, yeast cells, plant cells, insect cells, and animal cells.

78 (NEW). The method of claim 71 wherein the medium comprises a substrate of the polypeptide.

79 (NEW). The method of claim 78 wherein the substrate comprises a recognition motif comprising a serine, a threonine, and/or a tyrosine residue.

80 (NEW). The method of claim 71 wherein the biological activity is selected from the group consisting of phosphorylation of a substrate of the polypeptide, cell proliferation, and apoptotic cell death.

81 (NEW). The method of claim 71 wherein the medium comprises ^{32}P.

82 (NEW). The method of claim 71 wherein the method is used to identify antagonists and agonists from cells, cell-free preparations, chemical libraries, or natural product mixtures.

83 (NEW). The method of claim 71 wherein the candidate molecule is selected from the group consisting of natural or modified enzymes; natural or modified substrates, ligands, or receptors of the polypeptide; structural or functional mimetics of the polypeptide; catalytically inactive mutants of the polypeptide; small molecules; peptides; antibodies that bind to the polypeptide; and antisense molecules capable of blocking transcription or translation of mRNA encoding the polypeptide.

84 (NEW). A method of screening a candidate molecule to identify its ability to inhibit (antagonize) or agonize a recombinant polypeptide encoded by a nucleic acid molecule comprising the sequence of SEQ ID NO:6 or of SEQ ID NO:15, said method comprising the steps of:

(a) adding the candidate molecule to a medium which contains the polypeptide;

(b) determining the level of a biological activity in the medium; and

(c) comparing the level of biological activity of step (b) with the level of biological activity that occurs in the medium in the presence of the polypeptide and the absence of the candidate molecule;

wherein a decreased level of biological activity of step (b), as compared to the level of biological activity that occurs in the medium in the presence of the polypeptide and the absence of the candidate molecule, indicates an antagonist; and an increased level of biological activity of step (b), as compared to the level of biological activity that occurs in the

medium in the presence of the polypeptide and the absence of the candidate molecule, indicates an agonist.

85 (NEW). The method of claim 84 wherein the nucleic acid molecule encodes an amino acid sequence comprising the sequence of SEQ ID NO:12 or of Pro-2 through Glu-499 of SEQ ID NO:12.

86 (NEW). The method of claim 84 wherein the polypeptide comprises the amino acid sequence of SEQ ID NO:12 or of Pro-2 through Glu-499 of SEQ ID NO:12.

87 (NEW). The method of claim 84 wherein the recombinant polypeptide is a purified polypeptide.

88 (NEW). The method of claim 84 wherein the recombinant polypeptide is produced by cells in the medium.

89 (NEW). The method of claim 88 wherein the recombinant polypeptide is produced according to a method comprising culturing a recombinant host cell comprising a nucleic acid molecule comprising the sequence of SEQ ID NO:6 or of SEQ ID NO:15 under conditions promoting expression of said polypeptide.

90 (NEW). The method of claim 89, wherein the host cell is selected from the group consisting of bacterial cells, yeast cells, plant cells, insect cells, and animal cells.

91 (NEW). The method of claim 84 wherein the medium comprises a substrate of the polypeptide.

92 (NEW). The method of claim 91 wherein the substrate comprises a recognition motif comprising a serine, a threonine, and/or a tyrosine residue.

93 (NEW). The method of claim 84 wherein the biological activity is selected from the group consisting of phosphorylation of a substrate of the polypeptide, cell proliferation, and apoptotic cell death.

94 (NEW). The method of claim 84 wherein the medium comprises ^{32}P.

95 (NEW). The method of claim 84 wherein the method is used to identify antagonists and agonists from cells, cell-free preparations, chemical libraries, or natural product mixtures.

96 (NEW). The method of claim 84 wherein the candidate molecule is selected from the group consisting of natural or modified enzymes; natural or modified substrates, ligands, or receptors of the polypeptide; structural or functional mimetics of the polypeptide; catalytically inactive mutants of the polypeptide; small molecules; peptides; antibodies that bind to the polypeptide; and antisense molecules capable of blocking transcription or translation of mRNA encoding the polypeptide.

97 (NEW). A method of screening a candidate molecule to identify its ability to inhibit (antagonize) or agonize a recombinant polypeptide comprising the amino acid sequence of Pro-2 through Glu-499 of SEQ ID NO:12, said method comprising the steps of:

(a) adding the candidate molecule to a medium which contains the polypeptide and a substrate of the polypeptide;

(b) determining the level of a biological activity in the medium; and

(c) comparing the level of biological activity of step (b) with the level of biological activity that occurs in the medium in the presence of the polypeptide and the substrate and the absence of the candidate molecule;

wherein a decreased level of biological activity of step (b), as compared to the level of biological activity that occurs in the medium in the presence of the polypeptide and the substrate and the absence of the candidate molecule, indicates an antagonist; and an increased level of biological activity of step (b), as compared to the level of biological activity that occurs in the medium in the presence of the polypeptide and the substrate and the absence of the candidate molecule, indicates an agonist.

98 (NEW). The method of claim 97 wherein the recombinant polypeptide is a purified polypeptide.

99 (NEW). The method of claim 97 wherein the recombinant polypeptide is produced by cells in the medium.

100 (NEW). The method of claim 97 wherein the substrate comprises a recognition motif comprising a serine and/or a threonine residue.

These amendments to the claims are supported by the claims as filed in the prior application 09/509,902, by the specification generally and, in particular, by the following portions of the specification:

page 5, lines 26-27;
page 8, line 30 through page 10, line 13;
page 11, line 30 through page 13, line 16;
page 14, lines 16-18;
page 16, lines 12-13;
page 22, lines 13-29;
page 26, lines 14-18;
page 29, lines 26-29;
page 32, lines 5-8;
page 34, lines 9-22;
page 35, lines 27-32;
page 36, lines 1-14 and 23-25;
page 38, lines 5-15; and
page 42, line 11 through page 43, line 22.

No new matter has been added.

For the convenience of the Examiner an Appendix presenting marked-up versions of the specification and claims, as amended, is appended.

Information Disclosure Statement

Also submitted herewith is an Information Disclosure Statement and a Form PTO-1449.

If a telephone interview would be helpful in advancing the prosecution of this application, Applicants' attorney invites the Examiner to contact her at the number provided below.

Respectfully submitted,

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